

عنوان مقاله:

{Global attractor for a nonlocal hyperbolic problem on  $\{\mathcal{R}\}^N$

محل انتشار:

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خلاصه مقاله:

We consider the quasilinear Kirchhoff's problem  $u_{tt} - \phi(x) \|\nabla u(t)\|^2 \Delta u + f(u) = 0$ ,  $x \in \{\mathcal{R}\}^N$ ,  $t \geq 0$ , with the initial conditions  $u(x, 0) = u_0(x)$  and  $u_t(x, 0) = u_1(x)$ , in the case where  $N \geq 3$ ,  $f(u) = |u|^a u$  and  $(\phi(x))^{-1} \in L^{N/2}(\{\mathcal{R}\}^N) \cap L^\infty(\{\mathcal{R}\}^N)$  is a positive function. The purpose of our work is to study the long time behaviour of the solution of this equation. Here, we prove the existence of a global attractor for this equation in the strong topology of the space  $X_1 = \{ \text{cal } D^{1,2}(\{\mathcal{R}\}^N) \times L^2_g(\{\mathcal{R}\}^N) \}$ . We succeed to extend some of our earlier results concerning the asymptotic behaviour of the solution of the problem.

کلمات کلیدی:

quasilinear hyperbolic equations, Kirchhoff strings, global attractor, generalised Sobolev spaces, weighted  $L^p$  Spaces

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